

Amendments to the Specification

Replace paragraph [0003] with the following:

[0003] There are many applications where it is important to quickly and reliably detect gas leaks, particularly in systems which use hazardous or flammable ~~gases such~~ gases, such as hydrogen, natural gas, carbon monoxide or the like. In hydrogen fuel cell systems, for example, leaks must be detected quickly to avoid safety hazards. If the concentration of hydrogen in air exceeds about 4% there is a risk of explosion if the hydrogen is ignited.

Replace paragraph [0008] with the following:

[0008] In accordance with the ~~invention~~ invention, a method of detecting the location of a gas leak within a test region is provided. The method includes the steps of (a) providing a sensor array comprising a plurality of sensors configured to measure a plurality of gas concentrations; (b) measuring the plurality of gas concentrations; (c) determining a local gas concentration profile based on the measured gas concentrations; (d) moving the sensor array to a new location depending upon the local gas concentration profile determined in step (c); and repeating steps (b) to (d) until a stopping condition is achieved.

Replace paragraph [0009] with the following:

[0009] ~~Preferably~~ Preferably, the local gas concentration profile indicates a direction of higher gas concentration and the step of moving the sensor array to a new location comprises moving the sensor array in the direction of the higher gas concentration. The gas concentration profile may comprise, for example, a gas concentration gradient. The direction of higher gas concentration may be calculated according to a computer algorithm. In one embodiment, determining the local gas concentration profile may comprise comparing the measured gas concentrations at the new location to previously measured gas concentrations at other locations in the test region.

Replace paragraph [0010] with the following:

[0010] The stopping condition may be achieved when one of the measured gas concentrations exceeds a threshold. In one ~~embodiment~~ embodiment, the threshold is predetermined. In other ~~embodiments~~ embodiments, the stopping condition may be achieved when the sensor array repeatedly returns to the same location within the test region or when the array measures a plurality of nearly equal high gas concentrations within a localized subregion of the test region.